REMARKS

In the Office Action mailed April 11, 2008, Claims 1, 4-7, 9-13, 27, and 30-48 were pending in the present application. In the Office Action, the Examiner rejected all pending Claims under 35 U.S.C. § 103(a) as allegedly obvious over Goers et al. (U.S. Patent 6,722,952) in view of Homola (US 2004/0096705) and Hayden (U.S. Patent 4,606,738).

The standards for establishing a prima facie case of obviousness were presented in a previous response. With this in mind, Applicant contends that the cited references fail to sustain a *prima facie* case of obviousness in that the cited reference combination fails to teach or suggest all of the claim limitations of Applicant's invention.

Claims 1, 4-7, 9-13, 27, and 30-48 were rejected as allegedly obvious over Goers et al. in view of Homola and Hayden. Applicant respectfully submits that the amended claims are patentable over the cited references for lack of teaching of each and every element, and requests that the rejections be withdrawn.

Independent Claims 1 and 27 require the nanodiamond particles to include a carbonaceous coating. As taught in the specification, such carbonaceous coatings can provide a soft skin with lubricating properties, and a superhard interior suitable for polishing a surface, thus allowing for removal of material from a workpiece without scratching or damaging the workpiece. *See* page 13, lines 23-28.

The Examiner admits in paragraph 5 of the Office Action that neither Goers nor Homola disclose nanodiamond particles including a carbonaceous coating. The Examiner then argues that Hayden teaches that it is known to coat diamond abrasive particles with a carbonaceous (silicon carbide) coating. Respectfully, the Applicant points out that the claims require that nanodiamond particles include a carbonaceous coating. Hayden fails to teach nanodiamonds, and therefore, naturally fails to teach coated nanodiamonds.

Regarding nanodiamonds, the Applicant's specification defines nanodiamonds in the following manner:

> As used herein, "nanodiamond" refers to carbonaceous particles having crystal sizes in the nanometer range, i.e. about 1 nm to about 20 nm. Nanodiamond particles can also have nanometer range crystalline formations, e.g., about 1 nm to about 10 nm.

> Further, nanodiamond is intended to refer to particles having nanometer scale crystal structure. Nanodiamond particles can be formed using a number of known techniques. One nanodiamond formation technique involves the explosion of dynamite or other explosives to produce nanodiamond having nanocrystalline structure and has particle sizes in the range of from about 2 to about 10 nm. Typical fine diamond particles have a particle size larger than about 0.1 μm. These diamond particles are most commonly produced by pulverizing larger diamond particles. This pulverization process results in particles having irregular shapes and sharp corners. Additionally, some diamond particles can be pulverized to form particles in the nanometer size range. However, these pulverized diamond particles are often not suitable for polishing materials which require a mirror finish and very low surface roughness, i.e. in the angstrom range. Further, diamond is significantly harder than most other common abrasives. For example, diamond typically has a Moh's hardness (original scale) of about 10 or greater. *See* Page 7, lines 14-29.

As noted, Hayden fails to teach nanodiamonds. Hayden does not teach or suggest that nanocrystalline structure abrasives could be utilized as coated abrasives. Although size does not necessarily dictate the crystalline structure, Hayden teaches particles ranging in size from about 45/38 microns to 250/180 microns. *See* column 4, lines 43-47. Such sizes are typically not nanodiamond, as noted in the presently-pending specification. *See* Page 7, lines 14-29 of pending application.

As the claims clearly require carbonaceous coated nanodiamonds, and none of the cited references teaches carbonaceous coated nanodiamonds, a *prima facie case* of obviousness cannot be sustained and the rejection should be withdrawn.

CONCLUSION

In view of the foregoing, Applicant believes that presently pending Claims 1, 4-7, 9-13, 27, and 30-48 present allowable subject matter and allowance is respectfully requested. If any impediment to the entry of this Amendment and allowance of these claims remains after consideration of the above remarks, and such impediment could be removed during a telephone interview, the Examiner is invited to telephone Mr. David Osborne at (801) 566-6633, so that such issues may be resolved as expeditiously as possible.

Please charge any additional fees except for Issue Fee or credit any overpayment to Deposit Account No. 20-0100.

Dated this 9th day of July, 2008.

Respectfully submitted,

THORPE NORTH & WESTERN, LLP

/David W. Osborne/

David W. Osborne
Reg. No. 44,989
8180 South 700 East, Suite 350
Sandy, UT 84070
Telephone: (801) 566-6633
Facsimile: (801) 566-0750

DWO/SAS/ns